

Remarks

In view of the above amendments and following remarks, reconsideration and further examination are requested.

The specification and abstract have been reviewed and revised to make editorial changes thereto and generally improve the form thereof, and a substitute specification and abstract are provided. No new matter has been added by the substitute specification and abstract.

Claim 1, 2, 4, 11, 12, 17, 23, 26 and 61 were rejected under 35 U.S.C. §102(b) as being anticipated by Ogasawara et al.; claims 1-5, 13, 20 and 24-36 were rejected under 35 U.S.C. §102(b) as being anticipated by Sogard; claim 19 was rejected under 35 U.S.C. §102(b) as being anticipated by Honjo et al.; claims 6, 8, 12, 14 and 56 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ogasawara et al.; claims 7 and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kojima in view of Ogasawara et al.; claims 57-59 were allowed; and claims 9, 18 and 60 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The indication of allowable subject matter is greatly appreciated; however, claims 9, 18 and 16 have not been rewritten in independent form, but rather the rejected independent claims have been amended so as to distinguish these claims from the references relied upon by the Examiner.

Claims 1-65 have been cancelled and claims 66-100 have been added. New claims 66-100 generally correspond to former claims 1-26 and 54-62, respectively, with certain amendments being made thereto. Accordingly, claims 95 and 97 should be allowed for the same reasons that claims 57 and 59 were allowed by the Examiner, and similarly, claims 74, 83 and 98 should be found to contain allowable subject for the same reasons that the Examiner found claims 9, 18 and 60 to contain allowable subject matter. These new claims have been drafted taking into account the 35 U.S.C. §112, second paragraph, issues raised by the Examiner, are believed to be free of these issues, and are otherwise believed to be in compliance with 35 U.S.C. §112, second paragraph.

New claim 66 basically corresponds to former claim 1, but includes an additional limitation so as to distinguish this claim from Ogasawara et al. and Sogard. In this regard, claim 66 recites:

An electron beam system comprising:
an electron gun for emitting an electron beam and for irradiating the electron beam against a sample when the sample is positioned at an irradiation location;
an electron lens for magnifying the electron beam after having passed through the sample; and
a detector for detecting the electron beam after having been magnified so as to form an image of the sample,
wherein a crossover image of said electron gun is to be formed on or in the vicinity of a principle plane of said electrons lens.

By forming the cross over image of the electron gun on or in the vicinity of the principle plane of the electron lens, expansion of the electron beam on the principle plane is minimized, such that all aberrations can be significantly reduced. An electron beam system including such a feature is not taught or suggested by Ogasawara et al. or Sogard, and accordingly, claim 66 is not anticipated by either of these references.

New claim 89 basically corresponds to former claim 24, but includes an additional limitation so as to distinguish this claim from Sogard. In this regard, claim 24 recites:

An electron beam system comprising:
an electron gun for emitting an electron beam such that the electron beam is irradiated to a stencil mask, and electrons having passed through the stencil mask are detected to thereby detect a defect in the stencil mask,
wherein said electron gun has a thermionic emission cathode and is to be operated under a space-charge-limited condition and a small shot noise condition.

An electron beam system including such an electron gun is not taught or suggested by Sogard, and accordingly, claim 89 is not anticipated by Sogard.

New claim 91 basically corresponds to former claim 26, but includes additional positively recited steps. Because new claim 91 requires use of the electron beam system

as recited in claim 66, which system is not taught or suggested by Ogasawara et al. or Sogard as expressed above, claim 91 is also not anticipated by either of these references.

New claim 92 corresponds to former claim 54. None of the relied upon references teach or suggest the conjugate relationship as required by claim 54, and accordingly, this claim is allowable over the references cited by the Examiner either taken alone or in combination.

New claim 99 corresponds to former claim 61, but includes an additional limitation so as to distinguish this claim from Ogasawara et al. In this regard, claim 99 recites:

An electron beam system comprising:
an electron gun for emitting an electron beam and for irradiating the electron beam against a sample when the sample is positioned at an irradiation location;
an electron lens disposed close to the irradiation location, said electron lens for magnifying, as a transmission electron image, electrons that have passed through the sample so as to be detectable by either one of a CCD, a TDI or an EBCCD; and
an NA aperture between said electron gun and said irradiation location, with an NA aperture image to be focused on or in the vicinity of a principle plane of said electron lens,
wherein when a magnification for magnifying the electrons is to be changed, a distance between the irradiation location and said electron lens is changed.

An electron beam system including such an NA aperture is not taught or suggested by Ogasawara et al., and accordingly, claim 99 is not anticipated by Ogasawara et al.

None of the above deficiencies of Ogasawara et al. and Sogard are resolved by Honjo et al., or Kojima, and accordingly, each currently pending claim is allowable over the references relied upon by the Examiner either taken alone or in combination.

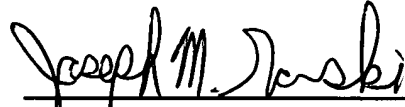
In view of the above amendments and remarks, it is respectfully submitted that the present application is in condition for allowance and an early Notice of Allowance is earnestly solicited.

If after reviewing this Amendment, the Examiner believes that any issues remain which must be resolved before the application can be passed to issue, the Examiner is invited to contact the Applicants' undersigned representative by telephone to resolve such issues.

Respectfully submitted,

Mamoru NAKASUJI et al.

By:



Joseph M. Gorski
Registration No. 46,500
Attorney for Applicants

JMG/pth
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
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